

TRANSLATION

OFFICIAL ACTION

(21) Application number **2000127748/03(029903)**.
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(51) IPC **7 C 03 B 5/235, C 03 B 3/00, C 03 B 5/04**

QUESTIONS, ARGUMENTS, OBJECTIONS, PROPOSALS

Upon consideration of the Application, the Department of Mining and Construction Engineering has found as follows.

There are claimed: a process for manufacturing compounds based on one or more silicates ... according to claims 1—11, 16—20; an apparatus for effecting said process according to claims 12—15, 21—25, and a process for the manufacture of glass according to claims 26—29. The adjusted set of claims submitted by the Applicant in his letter dated 08.04.2003 has been taken into account.

The Applicant claims priority of 05.02.1999, 22.12.1999, 18.01.2000 in accordance with the dates of filing first applications, respectively, 99/01406, 99/16297, PCT/FR00/00091, filed with the Patent Office of France.

The Applicant has not allocated the solicited priority in accordance with the patent claims or in accordance with the alternative features in the patent claims. The Examiner is of opinion that in first Application 99/01406 filed with the Patent Office of France on 05.02.1999 the features of independent claim 12 of the set of claims under consideration are not characterized. In view of the above-stated, it is taken into account that the priority of 05.02.1999 with regard to claims 12—15, 21—25 cannot be established.



The Examiner also draws the Applicant's attention to the fact that the dependent claims should be set out together with the independent claim with which they are associated.

The invention according to claim 1 is characterized in the following manner:

"A process for preparing compounds based on a silicate/silicates of alkali elements, such as Na, K, and/or alkaline-earth elements, such as Ca, Mg, and/or rare earths, such as Ce, optionally in the form of mixed silicates consisting of at least two of said elements, by processing silica and halides, particularly chloride/chlorides or sulfates or nitrates of said alkali elements and/or of said alkaline-earth elements, and/or of rare earths, such as NaCl, KCl, CeCl₄, characterized in that the supply of heat necessary for said processing is provided, at least partially, by using a submerged burner/burners".

The Examiner is of opinion that the process disclosed in EP 0812809 A2, C03B 5/225, 17.12.1997, 14 pp. [1] should be adopted as the closest analog.

The known process comprises processing silica and a chloride/chlorides or sulfates of alkali (NaCl, KCl) and/or of alkaline-earth elements in a glass-making furnace, wherein the heat required for the processing is provided by using a submerged furnace or submerged furnaces. As a result of the processing in the furnace there are formed compounds based on a silicate or silicates of alkali elements, such as Na, K, and/or of alkaline-earth elements, such as Ca, Mg, optionally in the form of mixed silicates, consisting of at least two of said elements.

In the Examiner's opinion, as regards the above-cited totality of features, from among the alternative ones indicated in claim 1 of the set of claims under consideration, claim 1 has no differences from [1] and, consequently, it fails to meet the condition of novelty (Section 19.5.2(3) of the currently acting wording of the Rules for Drafting, Filing and Examination of Invention Patent Applications (further referred to as the Rules)).

As regards the totality of features, comprising, along with the above-cited, introducing compounds of rare-earth elements, in view of the notoriety of using in the processing in melt of nitrates of rare-earth elements together with silica and compounds of alkali metals (Vargin V.V.,

Manufacturing of Colored Glass, Moscow, Gos. Izd-vo Legkoj Promyshlennosti, Leningrad, 1940, pp. 205, 220, 209 [2], a copy is enclosed), claim 1 with regard to the alternative features is obvious to a skilled person from the state of the art (Section 19.5.3(1) of the Rules).

The Applicant is invited to express opinion on the expedience of further consideration of the Application with regard to claim 1. If such expedience is confirmed, the Applicant should submit an adjusted set of claims (Section 19.5.4.(1) of the Rules).

When adjusting the set of claims, it is necessary to take into account that the features of claims 2, 4, 5, 16 are known from [1].

An apparatus as claimed in claim 12 is characterized in the following manner:

"An apparatus for carrying out the process according to any of the preceding claims, characterized in that it comprises at least one reactor(1) equipped with a submerged furnace/furnaces (3), and at least one means for supplying silica and/or a halide/halides, sulfates or nitrates, and also optionally for supplying solid or liquid fuels below the level of the melt of the raw materials, wherein said means for supplying is made as a charging device/devices (6) equipped with a feed-screw mechanism".

As the closest analog of an apparatus according to claim 12, there should be adopted an apparatus for processing in melt of silica and halides, particularly, of chloride or chlorides or sulfates or nitrates of alkali elements (Na, K) and/or of alkaline-earth elements (Ca, Mg) to produce a compound based on a silicate or silicates of alkali elements, such as Ca, Mg, optionally in the form of mixed silicates consisting of at least two of said elements, said apparatus comprising at least one reactor provided with a submerged burner or burners, and at least one means for supplying silica and/or a halide or halides, sulfates or nitrates, and also optionally for supplying solid or liquid fuels below the level of the melt of the raw materials, wherein said means for supplying is made as a charging device/devices (6) equipped with a feed-screw mechanism (WO 99/35099 A1, C03B 5/225, 15.07.1999, 45 pp. [3]).

In the Examiner's opinion, as regards the above-cited totality of features, from among the alternative ones indicated in claim 12 of the set of claims under consideration, claim 12 has no differences from [3] and, consequently, it fails to meet the condition of novelty (Section 19.5.2(3) of the Rules).

As regards the totality of features, comprising, along with the above-cited, introducing compounds of rare-earth elements, in view of the notoriety of using in the processing in melt of nitrates of rare-earth elements together with silica and compounds of alkali metals [2], claim 12 with regard to the alternative features is obvious to a skilled person from the state of the art (Section 19.5.3(1) of the Rules).

The Applicant is invited to express opinion on the expedience of further consideration of the Application with regard to claim 12. If such expedience is confirmed, the Applicant should submit an adjusted set of claims (Section 19.5.4.(1) of the Rules).

When adjusting the set of claims, it is necessary to take into account that the features of claims 13, 14 are known from [1].

A process for manufacturing glass as claimed in claim 26 is characterized in the following manner:

"A process for manufacturing glass comprising silica (silicon dioxide) and oxides of alkali elements of the Na₂O or K₂O type and/or oxides of alkaline-earth elements, such as CaO or MgO, and/or oxides of rare earths, such as CeO₂, by melting vitrifiable materials, wherein the supply of heat required for said melting is provided by one or more submerged furnaces within said molten vitrifiable materials, characterized in that the vitrifiable materials containing alkali metals of the Na or K type, or rare earths of the Ce type, or alkaline-earth metals are represented, at least partially, in the form of halides, namely, in the form of chlorides or sulfates or nitrates of said elements, such as NaCl, KCl, CeCl₄ or Na₂SO₄".

The Examiner is of opinion that as the closest prototype of the process according to claim 26 the process disclosed in [1] should be adopted.

The known process for manufacturing glass [1], comprising silica (silicon dioxide) and oxides of alkali elements of the Na₂O or K₂O type and/or oxides of alkaline-earth elements, such as CaO or MgO, and/or oxides of rare earths, such as CeO₂, by melting vitrifiable materials, wherein the supply of heat required for said melting is provided by one or more submerged furnaces within said molten vitrifiable materials, the vitrifiable materials containing alkali metals of the Na or K type, or rare earths of the Ce type, or alkaline-earth metals are represented, at least partially, in the form of halides, namely, in the form of chlorides or sulfates or nitrates of said elements, such as NaCl, KCl, CeCl₄ or Na₂SO₄.

In the Examiner's opinion, as regards the above-cited totality of features, from among the alternative ones indicated in claim 26 of the set of claims under consideration, claim 26 has no differences from [1] and, consequently, it fails to meet the condition of novelty (Section 19.5.2(3) of the Rules).

As regards the totality of features, comprising, along with the above-cited, introducing compounds of rare-earth elements, in view of the notoriety of using in the processing in melt of nitrates of rare-earth elements together with silica and compounds of alkali metals [2], claim 26 with regard to the alternative features is obvious to a skilled person from the state of the art (Section 19.5.3(1) of the Rules).

The Applicant is invited to express opinion on the expedience of further consideration of the Application with regard to claim 26. If such expedience is confirmed, the Applicant should submit an adjusted set of claims (Section 19.5.4.(1) of the Rules).

When adjusting the set of claims, it is necessary to take into account that the features of claim 27 are known from [1, 3].

Your reference: **VR2 1999008 RU/PCT**
Our reference: **2413-222708/005**
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In case the Applicant submits an adjusted set of claims, it is necessary that the Applicant should allocate priority in accordance with the patent claims and alternative features; the dependent claims should be set out together with those independent claims to which they are subordinated.

Enclosure: 4 sheets, one copy.

Leading official patent examiner